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Comments on Three Papers by Shun-hsin Chou,
Robert F. Dernberger, and Feng-hwa Mah

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RESEARCH ON COMMUNIST CHINA'S FOREIGN TRADE:
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I

The title of Feng-hwa Mah's paper neatly sums up the major impression produced by the papers before this session. There are, indeed, some problems in the statistical study of China's foreign trade.

1. The first problem arises from the gross disparity in the supply of data, respectively, from Chinese and other sources. The Chinese, evidently, publish next to nothing, and what there is seems so hard to interpret and to reconcile with data from other sources that at times one gets the feeling that we might be better off if they published nothing at all. The tantalizing presence of a very few cryptic data -- such as notably the global trade value series in yuan -- tends to stimulate research which, I fear, soon runs into sharply diminishing returns, and at the end leaves us not much wiser than before.

By contrast, a profusion of data is available from two other

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sources:

(a) The very detailed and informative Soviet official statistics published since 1955, which -- until recently at least -- covered about half of China's total trade.

(b) The statistics of non-Communist countries trading with China, conveniently consolidated and reduced to dollars by the U.S. Department of Commerce, which cover another quarter or so of China's foreign trade.

Not surprisingly, the major effort in American research on China's foreign trade has focused on exploitation of the prolific data provided by sources (a) and (b).

Some of this exploitation is addressed to relatively simple, unproblematic and important questions, such as study of changes in size, commodity structure, and geographic direction of China's trade, and trade balances, i.e., the kind of questions with which the first three sections of Shun-hsin Chou's paper are concerned, and which are well summarized by Robert F. Dernberger on pp. 2-5.

However, availability of this profusion of non-Chinese statistics has also stimulated research in more ambitious and more problematic directions. Both Chou and Mah (and they may not be alone) have invested considerable effort in analysis of commodity unit values, hoping to find explanations for, and appraise the economic significance of, the unit value differentials that are found to exist between Sino-Soviet trade, Soviet trade with Eastern Europe, and both Chinese and Soviet trade with non-Bloc countries. They are also concerned with price movements in Chinese foreign trade with

different areas, and China's terms of trade.

Challenging and interesting as these explorations are, I fear that they also raise the problem of diminishing return on research. Notably the study of unit value differentials and hypothetical "gains or losses" from trade with different partners, after a while, poses two kinds of difficulties.

One stems from the fact that unit values are not the same as "prices," and should never lightly be labelled or treated as such. The two familiar problems which haunt unit value analysis -- that of differences in valuation practices in national foreign trade statistics, and that of qualitative heterogeneity and excessive aggregation of commodities -- tend to afflict most of the results obtained with serious and irreducible uncertainties as to their validity and meaning.

The other difficulty is that -- once some obvious initial hypotheses have been either refuted, or found neither refutable nor verifiable because of the uncertainties just indicated -- continued unit value comparison runs the danger of becoming empirical research not guided by any discernible hypotheses.

II

To turn, in a more specific way, to the three papers, I shall comment, in turn, on:

- (1) Some aspects of the research plan outlined by Mah in Part I of his paper.
- (2) Mah's Part II, in order to elaborate on my remarks on the problems inherent in study of fragmentary Chinese data on trade value.

- (3) Some aspects of Chou's discussion of changes in structure and direction of trade.
- (4) The area of overlap between the Mah and Chou papers, i.e., foreign trade pricing and terms of trade.

Here and there I shall try to do justice to Dernberger's paper (which reached me rather late) by inserting references to it.

III

Item (1)

Mah's study is aimed at (a) reconstruction of the balance of payments; (b) analysis of the impact of foreign trade on economic growth. Both are interesting and important objectives; (a) in particular gains in importance in view of the economic crisis in China, the severe contraction of Sino-Soviet trade, and the shift of China's foreign exchange expenditures from producers' goods to food. China's recovery, and resumption of orderly economic development, will obviously depend heavily on her ability to finance a substantial flow of producers' goods imports. Knowledge of her past balance-of-payments experience, and present condition, will clearly help to appraise whether, when, and how China will regain this ability.

As Mah himself is clearly aware, the major difficulty in his task stems from the fact that what in old-fashioned terminology were known as "invisible transactions" are truly invisible in China's case.

On p. 3 he outlines his plans for obtaining estimates of the non-merchandise components of the current account, and of capital transactions.

It raises in my mind a question concerned with efficiency of research resource allocation: Given the fact that the U.S. government puts a considerable effort into collection and processing of this kind of information, is not the individual academic researcher at a very great disadvantage, and unproductively employed, if he sets out to gather the primary data himself all over again? I wonder if the host Committee should not explore possibilities of making the fruits of government research more fully and systematically available to academic economists, in order to enable them to proceed to interpretation and analysis, and free them of the burden of primary data collection.¹

My only other comment on Mah's plans amounts to a suggestion that in appraising the role of foreign trade in Chinese economic growth he should not use a method "similar to that used by Franklyn D. Holzman" in his Princeton paper (p. 4). Holzman's method, which emphasizes ratios of imports, capital inflow, etc., to Soviet national economic aggregates, is virtually designed, I fear, to grossly understate the contribution of foreign trade to the development of the USSR, and would do the same for China. Quantitatively, this contribution will always look very small for a large economy which (a) attempts to develop mainly by "mobilizing domestic resources,"

¹I don't think that classification need be an insurmountable problem. For instance, my impression is that the interesting review of China's current balance-of-payments position in John Scott's recent "Crisis in Communist China: A Report to the Publisher of TIME," Time Inc., 1962, largely represents U.S. government estimates. If they are accessible to a journalist, why not to an economist?

while in the long run minimizing dependence on trade and capital imports, but (b) controls the commodity mix of imports so as to maximize their contribution to its development objectives.

In reading Holzman, I could not help feeling that the verbal qualifications which accompany his quantitative results when they point to insignificance of trade are really more important than the results themselves -- i.e., qualifications on the qualitative roles played by Soviet imports. I wish Mah, and others, would devise a model that would move these qualitative considerations from the periphery of qualifications to the focus, where they deserve to be, and that would move away from prime dependence on quantitative measures of dubious general validity even for market economies.¹

I am pleased to see that Dernberger (pp. 20-28) has made some considerable progress towards what is, in effect, such a model. His tentative results provide some evidence for the proposition that foreign trade has played a large part in the dynamics of Chinese development in the 1950's.

Item (2)

Mah's Section II (pp. 4-14) caused me considerable difficulties. Its object seems to be to "assess the meaning of foreign trade statistics" obtained from (a) Chinese, (b) Soviet sources (p. 5). On pp. 4-9, Mah grapples with very real problems posed by (a). On pp. 10-14 he is worried about a problem in (b) which, I think, is

¹Holzman's quantitative findings on the contribution of foreign trade to U.S. development, I believe, also lead to understatement by leaving qualitative contributions out of account. The cost of the sparkplugs may be 0.5 per cent of the cost of the automobile, but it wouldn't go without them.

nonexistent. Let me break up my discussion accordingly.

(a). The discussion on pp. 4-6 and p. 9, supported by Tables 1 and 2, is intended to provide proof, I believe, for the surmise expressed on p. 5 that the yuan "trade volume" figure represents the sum of (i) China's non-Bloc trade, converted at the official yuan/dollar rate, and (ii) China's Bloc trade, converted at the official yuan/ruble rate. The rate used in operation (i) is said to be 2.46 yuan/\$ for 1953 and 2.36 yuan/\$ for 1954-1957, and that used in operation (ii), 1.04 rubles/yuan (p. 9).

Mah appears satisfied that the implicit yuan/\$ and ruble/yuan rates presented in his Table 2 are sufficiently close to the above rates to prove that the Chinese have been doing what they are surmised to have done in computing the yuan "turnover" total.

For 1953-1956, the implicit rates, indeed, appear to be in the same ballpark as the official rates: the implicit yuan/dollar rate never exceeds the official rate by more than 14 per cent; the implicit yuan/ruble rate is never more than 8 per cent below and 12 per cent above the official rate.

For 1957, however, the yuan/dollar rate is 38 per cent above, and the yuan/ruble rate 17 per cent below, the respective official rates. Whether this is still in the same ballpark is hard to judge, as the limits of the ballpark are neither defined nor definable. The 1957 results look even more bothersome if one rearranges Mah's arithmetic and -- on the assumption that the Chinese have been using the 2.36 and 1.04 rates -- calculates index numbers of trade value in yuan by applying

the percentages for trade with the free world and the Soviet Union cited by Mah, to the yuan "trade volume" total; and compares them to the index numbers of free world trade and Sino-Soviet trade implicit in the Department of Commerce and Soviet statistics, respectively.

One finds that the increase in China-free world trade in 1957 over 1956, measured in yuan, was 38 per cent, but only 7 per cent in dollars and according to the Department of Commerce series. Trade with the Soviet Union, according to the yuan series, would have declined by 27 per cent, but only by 14 per cent according to the Soviet series.

All this makes me wonder whether for 1957 there may not be something wrong with the percentage breakdowns of trade by area reported by the Chinese, or whether they may not have used different official conversion factors in that year. However, with the data on hand, it seems impossible to probe further into this question.

I note, incidentally, that the yuan/dollar rate for total trade implicit in the table on Dernberger's p. 35, Rows 1 and 2 (which fluctuates fairly narrowly from 3.40 to 3.61 during 1953-1960) does nothing particularly drastic in 1957, which leaves me more puzzled by Mah's findings for that year.

To conclude on this point, I am not sure why Mah is positive that the official "trade ruble"/yuan rate is 1.04 (p. 9). This, I understand, is an approximate value inferred by A. Eckstein at a time when direct information on this point was not available. Recent Soviet sources are unequivocal in stating that prior to 1/1/61 the

"commercial exchange rate" was 1.00 ruble = 1.00 yuan.¹ According to the same source, the new "uniform exchange rate" established 1/1/61 is 0.45 (new) rubles = 1 yuan. This exactly doubles the dollar value of the yuan, computed via the new ruble-dollar rate of \$1.00 = 0.90 rubles; from \$0.25 to \$0.50, thus possibly correcting the overvaluation of the ruble at the old ruble-yuan rate suspected by Mah (p. 4), and making the new ruble-yuan rate somewhat more consistent with the official yuan/dollar rate, 2.36 yuan/\$ according to Mah (p. 9).

(b) Mah's attempt to apply a "more realistic ruble/dollar rate" to Chinese intra-Bloc trade valued in rubles is based, I believe, on a misunderstanding of the ruble overvaluation problem. What he does (p. 10-11) is to convert ruble values of Chinese intra-Bloc trade, derived from official Soviet figures on Sino-Soviet trade, and Chinese- (or Soviet-) published ratios of Sino-Soviet and intra-Bloc trade to total trade, by a ruble/dollar rate of 9 rubles to the dollar, supposedly "more realistic" than the old official exchange rate of 4:1. The 9:1 rate is taken from a U.N. study which compared commodity unit values, in dollars, in Soviet foreign trade (obtained, presumably, by dividing reported ruble values by 4) to Soviet domestic wholesale prices, and found average ratios of about 8:1 for exports and 11:1 for imports.

Mah evidently believes that the dollar values shown for China's intra-Bloc trade in his Table 3, Column 4, are a truer measure of

¹Cf., e.g., I. P. Aizenberg, Valintnaia sistema SSSR, Moscow, 1962, p. 149.

the volume of such trade than values obtained by dividing official ruble trade values by 4.

This is not so. First, it is well established that the ruble values appearing in Soviet extrabloc trade statistics are obtained by converting values in dollars (and other foreign currencies) at the 4:1 ruble/dollar rate (up to 1960).¹

Second, in Soviet intra-Bloc trade prices are based on world market prices also expressed in foreign currencies and converted at the official ruble rate for both transactional and statistical purposes. Hence, unadjusted "foreign trade ruble" values, divided by 4, again will provide a truer approximation of dollar values of trade than the excessively deflated series in Mah's Table 3, where "foreign trade ruble" values are divided by 9.

What the U.N. study used by Mah brings out, in effect, is not any defect in the Soviet foreign trade statistics but simply the familiar fact that the 4:1 conversion rate overvalued the ruble in relation to its internal purchasing power. Like other similar studies, it indicated that the average purchasing power parity of

¹It may be noted that the dollar totals for Free World-USSR trade published by the U.S. Department of Commerce, multiplied by four, correspond as closely to Soviet rubles totals for trade with other than "socialist" countries as can be expected in the presence of all kinds of incomparabilities. For instance (in millions):

	<u>USDC \$ Value x 4</u>	<u>Soviet Ruble Value</u>
1958 Soviet Imports	4,004	4,431
1958 Soviet Exports	4,068	4,645
1960 Soviet Imports	6,184	7,017
1960 Soviet Exports	5,596	5,695

dollar to ruble, over the range of commodities and at the time indicated (1956), was nearer 10:1 than 4:1. For all we know, the Soviets were guided by this U.N. study (or, more likely, similar studies of their own) when, on January 1, 1961, they decreed that 10 rubles should be worth 1 new ruble internally, while in foreign trade 0.9 new rubles would equal \$1 (which corresponds to Mah's 9:1 old ruble/dollar ratio). Soviet sources have stated that the new ruble/dollar exchange rate was selected on the basis of ruble-dollar purchasing power comparisons for various categories of goods and services, and approximates average purchasing power parity "for the national product as a whole."¹

This overvaluation of the old foreign trade ruble must certainly be borne in mind for some uses of Soviet foreign trade data (e.g., obviously foreign trade ruble values should not be mixed in with ruble aggregates reflecting Soviet internal prices). But it does not justify the operations performed by Mah in his Table 3, and his conclusions on p. 12.

Item (3)

I have little to say about Chou's discussion of changes in commodity composition and direction of China's trade, except:

(a) I wish he had supplemented it with some more tables.

(b) That before he proceeds further, he might consider whether the Standard International Trade Classification really provides the best framework for studying interactions between foreign trade and

¹Aizenberg, op. cit., pp. 143ff.

economic development. I have long felt that SITC must have been created by customs officials, or somebody, with little interference from economists, and that its use often hinders rather than facilitates economic analysis. SITC abounds with absurdities, such as the separation of edible oils from "food," the indiscriminate mixing of agricultural and other commodities in the hodgepodge group of "crude materials"; and the similarly unfortunate mixing of producers' and consumers' durables under "machinery."

I do not want to spend too much time on this point, but let me merely observe that the commodity classification used in the official Soviet foreign trade statistics strikes me as much superior to SITC for the purpose of arranging trade data for analysis of the kinds of questions that the study of Chinese foreign trade should be addressed to.

Chou, generally, does not pursue the economic implications of the changes in foreign trade that he describes. However, I was slightly troubled by one move he makes in that direction, when he discusses the "effects of food exports on food supplies in China" (pp. 6-10). First, I do not see why "government demand" for rice, as he calculates it, should be independent of total rice production, except for the net export component. It seems more likely that total government collections will vary with the size of the harvest. Also, rice exports seem to have been responsive to the internal supply situation. This is suggested by the drop in 1957 (when other food exports were also curtailed), and more so by the severe reduction of exports since 1960.

Apart from this, I doubt that a comparison solely of rice exports

and government demand" can sustain a conclusion as positive as that "rice exports...could only have been attained through severe sacrifice of domestic consumption" (p. 8).

In 1958, for instance, China exported about \$143 million worth of rice to non-Bloc countries and the USSR (as well as, for that matter, some \$300 million of other foodstuffs). However, from the same countries she also imported some \$70 million of fertilizers and \$25 million of agricultural machinery. Appraisal of the net effect of foreign trade on China's food supply and domestic consumption would require knowledge of the increments of food output due to such imports.

In a different context (p. 12), Chou notes that in 1958 and 1959 China imported more than 1,000,000 tons of chemical fertilizers annually. I will leave it to experts to determine whether this would produce an incremental output of rice more or less than the 1.244 and 1.661 million tons of rice exported in the same years. However, I would guess that the marginal return on fertilizer and machinery application in China is very high indeed.¹

Item (4)

Reading Chou and Mah on (a) differential pricing, and (b) terms of trade, my first impulse was to look for comparable results and compare them. In both cases, the exercise turned out frustrating.

¹Incidentally, there is clearly an error in Chou's statement that, at a per capita rice consumption of 180 kilograms a year, rice "provided only 240 of the estimated 2300 calories of daily intake which the average diet of prewar China provided" (p. 7). At a caloric value of about 3330/kg (Tovarnyi Slovar', Vol., 3, p. 195), 180 kg a year would supply about 1630 calories.

The results are wide apart, and the detail presented in both papers is insufficient even to start speculating on the reasons.

(a) Differential Pricing

If I follow both authors correctly, the following series are conceptually identical and result from very similar statistical procedures:

- (i) Ratio of "hypothetical" to actual values of Chinese imports from USSR:

Chou, Table 4, Row 1, entries under "B"; and
Mah, Table 5, Column (5).

- (ii) Ratio of "hypothetical" to actual value of Chinese exports to USSR:

Chou, Table 4, Row 1, entries under "A"; and
Mah, Table 5, Column (5); with the entries
inverted to percentages of Column (4) to
Column (3).

These series are compared in the table below. The comparison, in Mah's case, is confined to results for his larger sample of commodities.

Both authors, in these series, present percentage ratios of "hypothetical" to actual value of segments of Sino-Soviet trade for which they have computed unit values. Actual value, in both cases, is that shown in the Soviet trade statistics. "Hypothetical" value, in Chou's case, is actual quantities revalued at unit values in Soviet trade with non-Bloc countries." In Mah's case, it is actual quantities revalued at unit values in Soviet trade with "free Europe." I do not know what definitional, and statistical, differences this may involve.

The two authors do not seem too far apart as regards the

Table 1

HYPOTHETICAL VALUE AS PERCENTAGE OF ACTUAL
VALUE IN SINO-SOVIET TRADE

Year	Chinese Exports to USSR		Chinese Imports from USSR	
	Chou	Mah	Chou	Mah
1955	115.2	96.5	205.5	64.7
1956	115.0	95.8	169.7	68.8
1957	123.6	102.5	138.0	73.1
1958	153.7	107.1	105.3	94.3
1959	-	105.9	-	70.0

percentages of total trade covered by their samples (see Table 2).

One does not know, however, how much correspondence there is between the respective commodity selections.

The difference in results is particularly striking for Chinese imports. Mah, throughout, shows "hypothetical" value below actual value and thus a consistent "price disadvantage" for China. Chou's "hypothetical" value is consistently above actual value, and in his comments he says that Russian earnings could have been increased if exports to China had been at prices charged for similar exports to non-Bloc countries (p. 24).

Conversely, for Chinese exports, Chou finds that in 1955-1959 China would have gained if paid at the unit values of Soviet imports from non-Bloc sources, at a sharply increasing rate in 1956-1958. Mah's results show the opposite for 1955-1956; and hypothetical gains for China in 1957-1958 which are quite moderate compared to those found by Chou.

Since Mah's and Chou's papers evidently were not available to

Table 2

PERCENTAGE OF TOTAL SINO-SOVIET TRADE VALUE COVERED

Year	Chinese Exports		Chinese Imports	
	Chou	Mah	Chou	Mah
1955	53.0	43.7	10.8	16.2
1956	43.3	42.5	10.9	20.9
1957	49.3	41.2	20.0	21.0
1958	46.4	40.5	30.0	33.0
1959	(35.3)	32.7	29.1	19.0

Dernberger when he wrote his, it is clearly unfair to point out that the unanimity of conclusions which he attributes to the students of unit values in China's trade does not exist. What he summarizes as their consensus (p. 10) is difficult to match with either Chou's or Mah's present numerical findings and verbal conclusions.

Thus, in the present state of knowledge, before judgment can be passed on "the veracity of the statistics used or the numerical results obtained" (Dernberger, p. 10), it would first be nice to see some consistency among the results.

There is, however, the question whether the price of buying consistency is really worth paying. Even consistent results would be fraught with all kinds of uncertainties as to their meaning.

In general terms (though not in every detail), I would subscribe to the seven "qualifications" mustered by Dernberger against the unit value exercises (pp. 10-19). I don't think their total weight is sufficient to "nullify the validity of their conclusions" (whatever these finally turn out to be), but they do well sum up the extreme difficulties that arise in interpreting the outcomes of

this particular "numbers game." The game, I think, was well worth trying to test some initial hypotheses suggested by casual inspection of the data, notably that of Soviet exploitation of Chinese economic and political dependence by systematic price discrimination. This hypothesis, I believe, has not passed the test, and at present it is hard to discern what the game is exactly about.

(b) Terms of Trade

Both Chou and Mah have independently calculated indexes of unit values for China's imports and exports, from which they derive terms of trade indexes. Of the several indexes presented in Chou's Table 5, only that of net barter terms of trade (" P_x/P_m ") for China's trade with the USSR is matched by a comparable series in Mah's Table 8. Recomputing Mah's unit value indexes to 1958=100, the two indexes of Sino-Soviet terms of trade compare as follows:

	<u>Mah</u>	<u>Chou</u>
1955	96.0	112.2
1956	96.8	127.8
1957	92.5	122.2
1958	100.0	100.0
1959	89.5	125.9

In 1955-1957 both indexes at least move together as regards direction of annual changes. Then, however, they part company completely: Mah's shows an improvement in China's terms of trade in 1958, followed by deterioration in 1959; Chou's shows the opposite, with swings of greater amplitude. This divergence seems puzzling, as both authors apparently use the same unit value index formulas (Chou, p. 32; Mah, p. 15), and the fact that Mah uses 1955, and Chou 1958 value weights should not make that much difference.

Otherwise, I find what Chou and Mah have to say on price movements and terms of trade tantalizing rather than informative, and am looking forward to seeing fuller versions of their studies.

There is, for instance, the striking decline in the price index of China's exports to non-Bloc countries in 1952-1959, briefly noted by Chou (p. 34), and the massive deterioration of China's terms of trade with Hong Kong and Britain indicated by Chou's Table 5. Since Mah's index of export prices for "Free Asia" (Table 8) shows no comparable trend (for 1955-1959, at any rate) this suggests that the cost to China of forcing entry into Western markets, and of export expansion in the Great Leap period particularly, may have been quite heavy.

For Sino-Soviet trade, Chou's and Mah's terms of trade indexes imply that extensive price changes occurred in 1958-1959, and Mah refers to such changes on p. 15. Here again, one looks forward to seeing their studies in detail. Examination, in a disaggregated way, of such negotiated price adjustments may contribute to better understanding of Sino-Soviet economic relations; more so, perhaps, than the aggregative studies of unit value differentials have done to date.